

Page 64, line 4, replace "~~Equally, other three~~" by --Similarly, three other--.  
 Page 68, line 24, replace "signal" by --signals--.  
 Page 69, line 20, replace "Thanking" by --Thanks--. *NE*  
 Page 70, line 14, replace "~~Equally, other three~~" by --Similarly, three other--. *NE*  
 Page 72, line 27, replace "supper" by --super--.  
 Page 75, line 7, replace "signal" by --signals--. *NE*  
 Page 79, line 10, replace "supper" by --super--. *NE*  
 Page 115, line 16, replace "It" by --There--;  
 line 20, replace "be no more" by --not be further--.  
 Page 116, line 27, replace "reproduce" by --reproduces--.  
 Page 117, line 2, replace "low" by --lower--;  
 line 4, after "inferior" insert --by--.  
 Page 118, line 1, replace "able to use" by --capable of being used--.

# IN THE CLAIMS:

Please cancel claims 1-38 without prejudice or disclaimer to the subject matter therein. Please add new claims 39-43 as follows.

--39. A signal transmission apparatus for transmitting a first data stream and a second data stream, said signal transmission apparatus comprising:

a modulator operable to assign each data stream to a respective constellation in a signal space to produce modulated signals such that the number of signal points of the first data stream assigned in the signal space is different from the number of signal points of the second data stream assigned in the signal space, and the first data stream has data for demodulation including information representing the number of signal points of the second data stream in the signal space, and to assign the first data stream to a constellation with m signal points, wherein m is equal to or less than 4;

an inverse Fast Fourier transformer operable to convert the modulated signals into a signal on a time axis to produce a transmission signal; and

a transmitter operable to transmit the transmission signal.

40. A signal receiving apparatus comprising:

a receiver operable to receive a received signal having information of a first data stream and a second data stream, wherein the number of signal points of the first data stream assigned in a signal space is different from the number of signal points of the second data stream assigned in the signal space, the first data stream has data for demodulation including information representing the number of signal points of the second data stream in the signal space, the first data stream is assigned a constellation of  $m$  signal points, and  $m$  is equal to or less than 4;

a Fast Fourier transformer operable to convert the received signal into a signal on a frequency axis; and

a demodulator operable to demodulate the signal on the frequency axis from said Fast Fourier transformer to produce the first and second data streams and to demodulate the second data stream according to the data for demodulation in the first data stream.

41. A signal transmission system for transmitting and receiving a first data stream and a second data stream, said signal transmission system comprising:

a signal transmission apparatus for transmitting the first and second data streams, said signal transmission apparatus including a modulator operable to assign each data stream to a respective constellation in a signal space to produce modulated signals such that the number of signal points of the first data stream assigned in the signal space is different from the number of signal points of the second data stream assigned in the signal space, and the first data stream has data for demodulation including information representing the number of signal points of the second data stream in the signal space, and to assign the first data stream to a constellation with  $m$  signal points, wherein  $m$  is equal to or less than 4, an inverse Fast Fourier transformer operable to convert the modulated signals into a signal on a time axis to produce a transmission signal, and a transmitter operable to transmit the transmission signal; and

a signal receiving apparatus including a receiver operable to receive a received signal having information of the first and second data streams, a Fast Fourier transformer operable to convert the

received signal into a signal on a frequency axis, and a demodulator operable to demodulate the signal on the frequency axis from said Fast Fourier transformer to produce the first and second data streams and to demodulate the second data stream according to the data for demodulation in the first data stream.

42. A signal transmission method for transmitting a first data stream and a second data stream, said signal transmission method comprising:

assigning each data stream to a respective constellation in a signal space to produce modulated signals such that the number of signal points of the first data stream assigned in the signal space is different from the number of signal points of the second data stream assigned in the signal space, and the first data stream has data for demodulation including information representing the number of signal points of the second data stream in the signal space, and assigning the first data stream to a constellation with  $m$  signal points, wherein  $m$  is equal to or less than 4;

inverse Fast Fourier transforming the modulated signals so as to convert the modulated signals into a signal on a time axis to produce a transmission signal; and  
transmitting the transmission signal.

43. A signal receiving method comprising:

receiving a received signal having information of a first data stream and a second data stream, wherein the number of signal points of the first data stream assigned in a signal space is different from the number of signal points of the second data stream assigned in the signal space, the first data stream has data for demodulation including information representing the number of signal points of the second data stream in the signal space, the first data stream is assigned to a constellation with  $m$  signal points, and  $m$  is equal to or less than 4;

Fast Fourier transforming the received signal so as to convert the received signal into a signal on a frequency axis; and